IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

PATENT APPLICATION

for

METHOD AND APPARATUS FOR ARRANGING FLEXIBLE AND COST-EFFICIENT PRIVATE AIR TRAVEL

Inventors: **Jeff Creed**
                51 Glass Terrace
                Duxbury, MA 02331

                Paul A. Svensen
                95 Mann Lot Rd.
                Scituate, MA 02066

                John I. Williams
                71 Arborway
                Jamaica Plain, MA 02130

                Tolga Erdogus
                316 Stowe Road
                Harvard, MA 01451

Attorney Docket: 2448/104

Attorneys:

                Bromberg & Sunstein LLP
                125 Summer Street
                Boston, MA 02110
                Phone: (617) 443-9292
                Fax: (617) 443-0004

Method and Apparatus for Arranging Flexible and
Cost-Efficient Private Air Travel

The present application is a continuation of Serial No. 09/909,413 which is a nonprovisional application filed on 19 July 2001 claiming priority from provisional application Serial No. 60/219,730 which was filed 19 July 2000, and provisional application Serial No. 60/306,334 which was filed 18 July 2001, all of which are hereby incorporated, in their entirety, by reference.

Technical Field

The present invention relates to air travel, and more particularly, to a method and apparatus for providing flexible, cost efficient private air travel.

Background to the Invention

Private air travel has conventionally been provided in three different ways. An individual (such as an individual person, business, organization or association) may purchase an aircraft and thus acquire full ownership of the aircraft. An individual may purchase part of an aircraft, a situation commonly referred to as fractional ownership. An individual may also hire or rent an aircraft through a charter company. Each of these situations involves its own cost considerations and use restrictions.

Full ownership includes amortization of aircraft acquisition cost as well as flight crew and maintenance charges. Further direct operating costs include fuel, taxes, catering and landing fees. The individual owner is limited to the use of a dedicated aircraft and ultimately pays for total available aircraft flight hours, whether or not the aircraft is utilized.

In the second situation, buyers purchase a share in an airplane. Generally, shares in a business airplane range from one-sixteenth to one-half of the total price of the plane. The buyer is guaranteed a proportional number of flight

hours and charged a per-flight hour fee as well as a monthly maintenance fee. If a buyer exceeds that number of hours, more hours may be purchased at a premium rate. Thus, fractional ownership includes the cost of acquiring the fractional share, a monthly management fee, an hourly rate fee, and a residual fee

5   at the completion of the acquisition term. The share purchased commits the owner to a predetermined annual number of flight hours in a specified aircraft type, regardless of whether the shareowner's needs change, and the owner cannot fly multiple simultaneous missions. Further, response time for a shareowner's flight request is typically at least six hours.

10   Charter situations include an hourly flight rate and a positioning charge if the passenger or customer is not departing from the charter operator's flight base. Additionally, one-way flights are usually performed at round trip prices because the charter carrier cannot leave an aircraft at a remote location to await the passenger's future return. The customer must locate a charter company that

15   serves the desired destination, the desired aircraft type, or both. A limited charter fleet size often limits service flexibility, hence it is difficult to serve one-way flight requirements. Further, the response time for a customer or passenger's flight request varies drastically depending on the charter carrier, and there are few carriers that operate on a national scale.

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Summary of the Invention

In accordance with an embodiment of the present invention, a method for providing private air travel to a plurality of customers includes establishing a pool of aircraft service providers and obtaining an aircraft service request from

25   each customer. The aircraft service request includes a set of customer specified parameters relating the customer's flight. One or more aircraft that conform to each set of customer-specified parameters is selected from the pool of aircraft service providers and matched to each aircraft service request, in accordance with the customer-specified parameters, in a manner that minimizes the

occurrence of passenger-less flights.

The method may further comprise receiving one or more service requests through a web page, and/or providing a travel card to one or more of the customers wherein the travel card represents a pre-purchased amount of private
5   aircraft service.

In accordance with another embodiment of the invention, a travel card for providing private air travel to a customer includes a first face and a second face, the first face including thereon an identification number for identifying a customer authorized to use the travel card and a designation representing a pre-
10   purchased allotment of private aircraft service. In a related embodiment, the first face or the second face may include thereon a designation representing a pre-determined number of private aircraft service upgrades that are redeemable at the option of the customer. The first face or the second face may also include thereon a magnetic strip that enables the card to be read by a magnetic strip
15   reader. In yet another related embodiment, the travel card may further comprise a processor and a memory disposed between the first face and the second face, and the memory may retain data pertinent to the customer's private aircraft service preferences and/or data pertinent to the customer's medical preferences, medical conditions or catering preferences. The memory may also retain data
20   pertinent to the customer's post-flight or pre-flight travel preferences. In a further related embodiment, the processor may include program code for establishing a communication link to a computer network when the program code is read by a computer, and the network may provide a communication link to a private air travel contractor.

25   In accordance with another embodiment of the invention, a graphical user interface for providing private air travel to a customer includes a request module, a selection module, and a payment module. The request module provides a request interface containing fields for entering private aircraft travel request information, and the payment module provides a payment interface

3

through which the customer may enter private aircraft travel payment information. The selection module provides a selection interface that displays information regarding the availability of aircraft that satisfy the customer's travel request information. In accordance with a related embodiment, the graphical

5   user interface may also include a tracking module that provides a tracking interface for displaying information regarding a flight status to a customer. In accordance with another related embodiment, the graphical user interface may also include an account module that provides an account interface for displaying information relevant to a private air travel customer's personal account.

10   In accordance with another embodiment of the invention, a graphical user interface for providing private air travel to a plurality of customers includes a search module that provides an interface whereby a user may locate, in substantially real time, an aircraft that satisfies travel requirements of each customer. The graphical user interface also includes a tracking module that

15   provides an interface whereby the user may track the flight progress of one or more aircraft that may satisfy travel requirements of each customer. In a related embodiment, the graphical user interface may also include a flight entry module that provides an interface containing fields for creating a flight for each customer and generating an interface for displaying a calender of updated flights in

20   accordance with the entry of each flight created. In further related embodiments, the graphical user interface may also include a flight information module that provides an interface for displaying information regarding aircraft availability to the user; a payment module that provides a payment interface containing fields by which a user may enter customer payment information; and/or a report

25   module that provides an interface whereby a user may generate a flight report.

In accordance with another embodiment of the invention, a system for providing private air travel to a plurality of customers includes means for communicating with a plurality of aircraft service providers, the aircraft service providers supplying a plurality of aircraft types from a plurality of locations and

means for communicating with each customer, each customer providing an itinerary for private air travel, such that at least one aircraft from the plurality of aircraft service providers is matched to the itinerary in a manner that minimizes the occurrence of passenger-less flights.

5   In accordance with a further embodiment of the invention, a computer program product for providing a database for providing private air travel to a plurality of customers, the computer program product comprising a computer readable medium having computer code thereon, includes program code for receiving data regarding aircraft provided by at least one satellite dish and at

10   least one computer network, and program code for storing the data provided by the satellite dish and the computer network.

In accordance with a yet another embodiment of the invention, a method for providing private air travel to a plurality of customers includes receiving data relevant to a plurality of aircraft owned by a plurality of aircraft service

15   providers via a first communication link, and receiving data relevant to a plurality of customer service requests via a second communication link. The data received from the first and second communication links is saved to a storage medium and analyzed in order to match at least one aircraft to each customer service request in a manner that minimizes the occurrence of

20   passenger-less flights.

In accordance with another embodiment of the invention, a method for providing travel services including private air travel to a plurality of customers includes providing a pre-purchased allotment of private air travel to one or more of the customers and receiving a travel service request from each customer,

25   wherein the travel service request includes customer-specified flight parameters. The method also includes providing an aircraft that satisfies the customer-specified flight parameters for each customer's travel service request. The value of the travel service is debited from the pre-purchased allotment of private air travel for each customer provided with a pre-purchased allotment.

Brief Description of the Figures

The foregoing features of the invention will be more readily understood by reference to the following detailed description taken with the accompanying drawings in which:

5   Fig. 1 is block diagram illustrating a system for providing private air travel in accordance with an embodiment of the present invention;

Fig. 2 is an illustration of a graphical user interface which may be used to provide private air travel in accordance with an embodiment of the invention;

Fig. 3 is an illustration of an aircraft locator interface for conducting a

10   search for aircraft in accordance with another embodiment of the invention;

Fig. 4 is an illustration of an interface by which a user may view the results of the search conducted in accordance with the embodiment of Fig. 3;

Fig. 5 is an illustration of a aircraft location display interface in accordance with the embodiment of Fig. 3;

15   Fig. 6 is an illustration of airport locator display interface in accordance with the embodiment of Fig. 3;

Fig. 7 is an illustration of a graphical user interface for tracking one or more aircraft in accordance with the embodiment of Fig. 3;

Fig. 8 is an illustration of an interface for viewing the tracked aircraft in

20   accordance the embodiment of Figs. 3 and 7;

Fig. 9 is an illustration of an interface for viewing tracked aircraft in a particular geographical region accordance with the embodiment of Figs. 3, 7 and 8;

Fig. 10 is an illustration of a web page providing a graphical user interface

25   to a customer in accordance with another embodiment of the present invention;

Fig. 11 is a graphical illustration of a travel card in accordance with another embodiment of the invention;

Fig. 12 is a flow chart illustrating a method for providing private air travel in accordance with an embodiment of the present invention;

Fig. 13 is a flow chart illustrating the method of Fig. 11 detailing pre-flight procedures;

Fig. 14 s a flow chart illustrating the method of Fig. 11 detailing post-flight procedures;

5　　　　Fig. 15 is an illustration showing login icon on a pull down menu of the flight command center module in accordance with an embodiment of the invention;

Fig. 16 is an illustration showing a login interface in accordance with the icon of Fig. 15;

10　　　　Fig. 17 is an illustration showing a user password interface of the flight command center module of Fig. 15;

Fig. 18 is an illustration showing a command center application menu of the flight command center module of Fig. 15;

Fig. 19 is an illustration showing navigation bars used in accordance with

15　the flight command center module of Fig. 15;

Fig. 20 is an illustration showing screen view pull down menu of the flight command center module of Fig. 15;

Fig. 21 is an illustration showing a user help pull down menu of the flight command center module of Fig. 15;

20　　　　Fig. 22 is an illustration showing a customer information pull down menu of the flight command center module of Fig. 15;

Fig. 23 is an illustration showing a customer information interface of the flight command center module of Fig. 15;

Fig. 24 is an illustration showing a customer search interface of the flight

25　command center module of Fig. 15;

Fig. 25 is an illustration showing a customer action detail interface of a flight command center module of Fig. 15;

Fig. 26 is an illustration showing a customer action interface of the flight command center module of Fig. 15;

Fig. 27 is an illustration showing a customer preferences interface of the flight command center module of Fig. 15;

Fig. 28 is an illustration showing a customer references interface of the flight command center module of Fig. 15;

5 Fig. 29 is an illustration showing a complimentary upgrade report interface of the flight command center module of Fig. 15;

Fig. 30 is an illustration showing an options pull down menu of the flight command center module of Fig. 15;

Fig. 31 is an illustration showing a travel card information interface of the
10 flight command center module of Fig. 15;

Fig. 32 is an illustration showing a travel card/customer balance information interface of the flight command center module of Fig. 15;

Fig. 33 is an illustration showing a travel card referral interface of the flight command center module of Fig. 15;

15 Fig. 34 is an illustration showing an aircraft information interface of the flight command center module of Fig. 15;

Fig. 35 is an illustration showing an aircraft photograph interface of the flight command center module of Fig. 15;

Fig. 36 is an illustration showing an aircraft feedback interface of the flight
20 command center module of Fig. 15;

Fig. 37 is an illustration showing an aircraft search interface of a search and notification module associated with the flight command center module of Fig. 15;

Fig. 38 is an illustration showing a display by which a user may view the
25 results of a search conducted using the search interface of Fig. 37;

Fig. 39 is an illustration showing an airport information interface of the flight command center module of Fig. 15;

Fig. 40 is an illustration showing an airport locator interface of the flight command center module of Fig. 15;

Fig. 41 is an illustration showing an aircraft service provider information interface of the flight command center module of Fig. 15;

Fig. 42 is an illustration showing an aircraft service provider search interface of the flight command center module of Fig. 15;

5 Fig. 43 is an illustration showing an address/city selection interface of the flight command center module of Fig. 15;

Fig. 44 is an illustration showing a flight information pull down menu of the flight command center module of Fig. 15;

Fig. 45 is an illustration showing a flight worksheet interface of the flight 10 command center module of Fig. 15;

Fig. 46 is an illustration showing flight report interface of the flight command center module of Fig. 15;

Fig. 47 is an illustration showing a month view of a flight calendar interface of the flight command center module of Fig. 15;

15 Fig. 48 is an illustration showing week view of the flight calendar interface of Fig. 47;

Fig. 49 is an illustration showing a day view of the flight calendar interface Fig. 47;

Fig. 50 is an illustration showing a grid view of the flight calendar 20 interface of Fig. 47;

Fig. 51 is an illustration showing a flight calendar filter interface associated with the flight calendar interface of Fig. 47; and

Fig. 52 is an illustration showing an option menu associated with the flight calendar interface of Fig. 47.

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Detailed Description of Specific Embodiments

Fig. 1 is block diagram illustrating a system for providing private air travel in accordance with an embodiment of the present invention. The system includes a plurality of aircraft service providers **101** in communication with a private air

travel contractor **102**. (As used herein, a "contractor" refers to the entity providing or arranging the private air travel to the customer and engaging services from the aircraft service providers. Additionally, an "aircraft service provider" may be a charter company or an aircraft owner. In certain

5   embodiments of the invention, an aircraft service provider may be referred to as a "carrier".) The aircraft service providers **101** supply a variety of aircraft types which may travel to and from any number of locations both nationally and internationally. The private air travel contractor **102** is in communication with a plurality of customers, such as customers **104** and **105**, via a network **110**. The

10   network **110** may include a Wide Area Network (WAN), such as the Internet, a System Area Network (SAN), or a Local Area Network (LAN) such as a CAT 5 certified LAN. The customers **104, 105** may communicate with the contractor **102** via the network and an electronic link established by program code resident on a processor contained in a travel card provided by the contractor **102**. Similarly,

15   the customers **104, 105** may communicate with the contractor **102** via facsimile, e-mail, web-page, telephone, or in person. The private air travel contractor **102** matches at least one aircraft from at least one of the plurality of aircraft service providers **101** to a private air travel request from each customer **104** and **105** in accordance with a set of customer-specified parameters that are provided by the

20   customers **104** and **105** in a manner that minimizes the occurrence of passenger-less flights, as will be described in greater detail below.

The contractor **102** may choose from a plurality of different aircraft types and sizes (such as turbo prop aircraft, light jet aircraft, a mid-size jet aircraft, or a heavy jet aircraft) in accordance with the customer's requirements or preferences,

25   and the aircraft may be automatically upgraded to a different size or type at a later time. The contractor **102** may also be in communication with other travel service providers **109** to provide each customer **104, 105** with, for example, ground transportation (e.g., car rental services, taxi services, private bus services and train services), boat and ferry services, and hotel or motel or other travel

accommodations.

In order to minimize the occurrence of passenger-less flights, the contractor **102** has access to one or more databases **120**, which may be resident on one or more database servers **112**. Similarly, the database **120** may be accessed through the network **110**. The database **120**, under appropriate program control, receives real time and batch mode data from a plurality of disparate sources. These sources include, but are not limited to, the aircraft service providers **101**, individual aircraft, airports, travel services providers **109**, city resources **107**, state resources **106**, and country resources **108**. The contractor **102** is also in communication with one or more satellite dishes **114**, either directly or through the database **120** or server **112**.

Data received from these sources includes, but is not limited to: information pertinent to flight statuses (active flights, proposed flights, landed flights, one-way flights and transient flights); information regarding aircraft types; information regarding time zones; information regarding aircraft safety and maintenance histories; information regarding aircraft service provider safety history; information regarding pilot safety and training histories; and information regarding pre-flight or post-flight travel arrangements and accommodations.

In accordance with one embodiment of the invention, data is obtained from the various sources using software programs such as those provided by Microsoft®, Inc., Air Charter Guide™ (ACG), RLM Software, Inc. and ARGUS, Inc. For example, a contractor **102** may use a standardized Microsoft® Windows 2000® operating system for all server and workstations associated with the contractor's business. Data feeds for active, proposed, and landed flights may come from third party applications that may use Windows NT®. The RLM software provides the contractor **102** (either directly, or through the database **120** and/or database server **112**) with a communication link to one or more satellite dishes such that information regarding the position of all aircraft with recorded

11

or filed flight plans is updated every three minutes. The positioning information may include the tail number associated with an aircraft, the origin and destination airports associated with an aircraft, the departure and arrival time associated with an aircraft, the longitude and latitude associated with an aircraft

5   and a last known status associated with an aircraft.

The ACG software provides the contractor **102** with a communication to the Internet such that information relevant to aircraft availability (particularly with respect to one-way and transient flights) is updated every hour. As used herein a "transient" aircraft refers to a flight or aircraft that is landed at an

10   aircraft base that is not its home base. A transient aircraft is waiting to be scheduled for a flight destined for the aircraft's home base. The ACG software also provides the contractor **102** with "on demand" information about aircraft, airports and service providers, as will be described in greater detail below.

The ARGUS software provides the contractor **102** with a communication

15   link to the Internet, supplied on demand, such that information regarding quality inspection ratings for aircraft service providers and aircraft may be obtained. Information obtained utilizing such software devices may be stored in the database **120** via the contractor, or the information may be delivered directly to the database server **112** from external sources for storage to the database **120**.

20   In order to replicate the data provided by the various data sources, the contractor **102** may run automatic scheduled "jobs" (usually performed by software programs or programmed middleware or hardware components) on the database **120** via the database server **112**. These jobs provide error logs and automatic notifications to the contractor **102** upon the failure of some aspect of

25   the system. Such jobs are automatically executed every three minutes or less, or as close to real-time as possible given the rate information is received by the contractor or input to the database **120**. For example, a "flight data update" job may serve to take in the positioning information provided by the software described above and update appropriate modules in the database **120** in

accordance with a flight's status. As noted above, flight statuses include "active", "proposed", "landed", "one-way" or "transient". These are statuses are based on the recorded (or filed) flight plans of the aircraft as well information obtained through the RLM and ACG software. Each status may be archived to a separate

5   module in the database **120** for future analysis of an aircraft's flight history.

Similarly, an "availability" job is designed to record the one-way and transient availability of aircraft associated with the system, and a "demand" job is designed to record all information about each aircraft, airport, and aircraft service provider **101**. By receiving information in the manner described above,

10   and recording and updating information in the database **120** in accordance with jobs similar to those described above, it is possible to know the status, origin, destination, speed and capacity of all aircraft associated with the system and to use this information to minimize the occurrence of passenger-less flights and provide cost efficient and flexible private air travel service.

15   The database **120** is a highly normalized relational database that houses many different kinds of information and allows correlation of all the entities or objects that correspond to different aspects of the system. For example, objects or entities representing aircraft service providers are correlated with objects or entities representing aircraft that the aircraft service providers operate and/or

20   own. Further, the system manipulates data imported to the system and provides normalized views of all the imported data. The contractor **102** may also "de-normalize" the different types of information into separate modules in the database **120**. Such de-normalizing results in the fastest response time for the users of the system because the separate modules allow a user (usually a

25   contractor or contractor personnel) to simply select information contained in one module via a display device, such as a computer monitor and a keyboard or mouse.

By manipulating the modules in the database, the system is able to provide conflict resolution for aircraft and aircraft service providers. For

example, if an aircraft has been given a specific tail number and information concerning that tail number has been received by the system, the information will be stored in a conflict module which may be accessed by the database **120**. Similarly, if a aircraft service provider **101** has a name, information received by

5   the system concerning that name may likewise be stored in a conflict module in the database **120**. The information stored in the conflict module may be compared to scheduled or proposed customer requests in order to assess the possibility of employing a particular aircraft or travel service provider to perform a particular service request. Modules may include objects or structures

10   (sometimes referred to herein as "tables" or "entities") in accordance with programming languages such as C, C++, JAVA, CORBA HTML, or the like. The information stored in the conflict module may then be used to update the system or the information may be discarded.

         Further, in accordance with the database architecture, software and

15   processes that enable automatic data feeds to the system can accommodate different data fields coming from separate data sources for the same kind of information. As noted above, the database architecture includes a conflict resolution system that identifies conflicting pieces of data coming from separate data sources. Additionally, an abstraction layer may be provided which will

20   allow the introduction of new data sources at any time.

         In accordance with an embodiment of the invention, tables are used in a client server application to present easy-to-use, fast, intuitive screens to the users of the system. The system may use the Microsoft® SQL Server™ 2000 however, the use of case tools and generic Entity Relationship (ER) Modeling helps ensure

25   the portability of the database **120**. Examples of entities (or tables) used in the system in accordance with Entity Relationship Modeling include, but are not limited to:

Entity ACTION_TYPE

Card of the entity ACTION_TYPE

14

Name	ACTION_TYPE
Comment	An ACTION_TYPE table contains the action type name. The action type table may have many customer histories associated with it. The data input to this table generally comes from contractor personnel.

Entity ADDITION_TYPE

5   Card of the entity ADDITION_TYPE

Name	ADDITION_TYPE
Comment	An ADDITION_TYPE table is used to indicate what type of addition is made against a customer travel card. Typical values for an ADDITION_TYPE are credit memo, endorsement, initial deposit, and additional deposit.

Entity ADDRESS

10   Card of the entity ADDRESS

Name	ADDRESS
Comment	An ADDRESS table contains data on addresses for service carriers and customers, such as a street address, a primary address indicator, etc. An ADDRESS may have many credit card numbers, a service carrier, a city, and a customer associated with it. An ADDRESS may have been last updated by one data source. The data input to this table generally comes from the ACG software and contractor personnel.

Entity ADDRESS_TYPE

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Card of the entity ADDRESS_TYPE

Name	ADDRESS_TYPE
Comment	An ADDRESS_TYPE table contains possible address types in the system so that each ADDRESS entry can be associated with a certain ADDRESS_TYPE. Possible values are home, office, vacation home, FedEx, or old. This table allows the contractor to get in touch with its customers based on the ADDRESS_TYPE that designates a customer's whereabouts.

5   Entity AIRCRAFT

Card of the entity AIRCRAFT

Name	AIRCRAFT
Comment	An AIRCRAFT table contains data on all aircraft world-wide, including tail number, condition, rate, ARGUS rating, etc. An AIRCRAFT may have many photos associated with it, may have many flight legs, many transient periods, many one-way flights, and many features associated with it. An AIRCRAFT may be black listed many times, preferred many times, have many ARGUS audits, and fly for many fractional companies. An AIRCRAFT may have only one base airport, one service carrier, and one aircraft type associated with it. An AIRCRAFT may have been last updated by one data source. The data input to this table generally comes from the ACG software and contractor personnel.

Entity AIRCRAFT_CATEGORY

Card of the entity AIRCRAFT_CATEGORY

Name	AIRCRAFT_CATEGORY
Comment	An AIRCRAFT_CATEGORY table contains data on categories of planes including light jet, midsize jet, one way rate, round-trip rate, etc. An AIRCRAFT_CATEGORY may have many aircraft types and many flights associated with it. The data input to this table generally comes from contractor personnel.

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Entity AIRCRAFT_FEATURE

Card of the entity AIRCRAFT_FEATURE

Name	AIRCRAFT_FEATURE
Comment	An AIRCRAFT FEATURE table is a "join" table between the AIRCRAFT table and the AIRCRAFT_FEATURE_TYPE table. An aircraft may have many feature types and each feature type can belong to many aircraft. This necessitates a "many to many" relationship between the AIRCRAFT and the AIRCRAFT_FEATURE _TYPE tables and this relationship results in this AIRCRAFT_FEATURE table. A typical example of a feature would be TV, restroom, leather seats, etc.

10

Entity AIRCRAFT_FEATURE_TYPE

Card of the entity AIRCRAFT_FEATURE_TYPE

Name	AIRCRAFT_FEATURE_TYPE
Comment	An AIRCRAFT_ FEATURE_TYPE contains the aircraft feature name. An AIRCRAFT_FEATURE_TYPE may have many aircraft associated with it. The data input to this table generally comes from contractor personnel.

15

Entity AIRCRAFT_FILTER

Card of the entity AIRCRAFT_FILTER

Name	AIRCRAFT_FILTER
Comment	An AIRCRAFT_FILTER table is a list of tail numbers corresponding to aircraft that were omitted from the active/proposed/landed flight tracking system. Each entry in this table may be a Structured Query Language ("SQL") "like" expression that may be matched against any new real-time flight information received by the system.

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Entity AIRCRAFT_HISTORY

Card of entity AIRCRAFT_HISTORY

Name	AIRCRAFT_HISTORY
Comment	An AIRCRAFT_HISTORY table is used to track customer and contractor feedback about an aircraft. The data input to this table generally comes from contractor personnel.

10

Entity AIRCRAFT_PHOTO

Card of the entity AIRCRAFT_PHOTO

Name	AIRCRAFT_PHOTO
Comment	An AIRCRAFT may have many AIRCRAFT_PHOTOs associated with it. The photos for an aircraft are kept in the AIRCRAFT_PHOTO table as a Binary Large Object ("BLOB"). Their order (most important to less important) is governed by an AIRPHO_ORDER flag.

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Entity AIRCRAFT_SAVED_SEARCH

Card of the entity AIRCRAFT_SAVED_SEARCH

Name	AIRCRAFT_SAVED_SEARCH
Comment	This is an envelope table for a saved search. It may have a "one-to-many" relationship with the AIRCRAFT_SAVED_SEARCH_DETAIL table, where the parameters for the search are stored. A search name and search time frame that applies to all detail parameters may be saved in this table. A MAP_LAYER may point to a saved search to indicate that the particular layer will contain the results of a newly executed "saved search".

Entity AIRCRAFT_SAVED_SEARCH_DETAIL

5   Card of the entity AIRCRAFT_SAVED_SEARCH_DETAIL

Name	AIRCRAFT_SAVED_SEARCH_DETAIL
Comment	AIRCRAFT_SAVED_SEARCH_DETAIL is a table for each parameter of a saved search. Each parameter contains information necessary in order to save the details for an active/proposed/landed/one-way or transient flight search. Parameters for all the statuses are the same and may include: current position, home base, departure position, destination position, ARGUS rating, plane type, features, etc.

Entity AIRCRAFT_SUB_CATEGORY

10   Card of the entity AIRCRAFT_SUB_CATEGORY

Name	AIRCRAFT_SUB_CATEGORY
Comment	This table is necessary to further categorize light, medium, heavy jets into light slow/light fast, medium slow/medium fast, etc. It is a detailed sub- table of the AIRCRAFT_CATEGORY table.

Entity AIRCRAFT_SUB_CATEGORY_SPEED

15   Card of the entity AIRCRAFT_SUB_CATEGORY_SPEED

19

Name	AIRCRAFT_SUB_CATEGORY_SPEED
Comment	For each entry in the AIRCRAFT_SUB_CATEGORY table there may be an associated speed of aircraft for a given hour of a flight. In the first hour, planes are generally slower, in the second hour, a little faster and then speed remains substantially constant until descent. So each sub category can have a list of hours for which there is a speed recorded. This table is a detailed sub-table of the AIRCRAFT_SUB_CATEGORY.

Entity AIRCRAFT_TYPE

5 Card of the entity AIRCRAFT_TYPE

Name	AIRCRAFT_TYPE
Comment	An AIRCRAFT_TYPE table contains an aircraft type name, the aircraft model name and the aircraft manufacturer's name. An AIRCRAFT_TYPE may have many aircraft and one aircraft category associated with it. An AIRCRAFT_TYPE may have been last updated by one data source.

Entity AIRCRAFT_WATCH_LIST

10 Card of the entity AIRCRAFT_WATCH_LIST

Name	AIRCRAFT_WATCH_LIST
Comment	An AIRCRAFT_WATCH_ LIST table includes a static list of aircraft tail numbers. The table allows contractor personnel to group certain aircraft together for constant monitoring and/or tracking. Each AIRCRAFT_SAVED_SEARCH entity may be associated with an AIRCRAFT_WATCH _LIST in order to indicate the last search result. In this manner, if the search is marked as a real-time search (which means it will periodically be re-executed) the new result may be compared

	to an old result such that contractor personnel will be notified only of the new aircraft which may then be added to the associated AIRCRAFT_WATCH_LIST. A static fleet of aircraft, such as a competitor's aircraft or a partner carrier's aircraft may be easily monitored with this functionality.

Entity AIRCRAFT_WATCH_LIST_DETAIL

15   Card of the entity AIRCRAFT_WATCH_LIST_DETAIL

Name	AIRCRAFT_WATCH_LIST_DETAIL
Comment	An AIRCRAFT_WATCH_LIST_DETAIL table is used to save the actual aircraft identifications (AIRCRAFT_ID) of the "watched" tail numbers. An AIRCRAFT_WATCH_LIST entry has many AIRCRAFT_WATCH_LIST_DETAILs. In this way, the AIRCRAFT_WATCH_LIST contains an "envelope" of information for the watch list, and the AIRCRAFT_WATCH_LIST_DETAIL table contains all of the watched aircraft.

Entity AIRPORT

20   Card of the entity AIRPORT

Name	AIRPORT
Comment	An AIRPORT table contains data on all airports world-wide; Such as, airport code, address, runway length, etc. An AIRPORT may be the base for many aircraft and may have many transient planes and many airport services associated with it. An AIRPORT may have in one city and one time zone associated with it. An AIRPORT may have been last updated by one data source. The data input to this table generally comes from the ACG software and contractor personnel.

Entity AIRPORT_SERVICE

Card of the entity AIRPORT_SERVICE

Name	AIRPORT_SERVICE
Comment	An AIRPORT_SERVICE table contains the airport service name and notes. An AIRPOR_ SERVICE may have many airports and one airport service type associated with it. The data input to this table generally comes from the ACG software and contractor personnel.

5

Entity AIRPORT_SERVICE_JOIN

Card of the entity AIRPORT_SERVICE_JOIN

Name	AIRPORT_SERVICE_JOIN
Comment	An AIRPORT_SERVICE_JOIN table is an internal table that allows a "many to many" relationship between airports and airport services. It contains primary keys from the airport table and the airport services table. An AIRPORT_SERVICE_JOIN table may have many telephone numbers, an airport and an airport service associated with it. The data to this table generally comes from the ACG software and contractor personnel.

10

Entity AIRPORT_SERVICE_TYPE

Card of the entity AIRPORT_SERVICE_TYPE

Name	AIRPORT_SERVICE_TYPE
Comment	An AIRPORT_SERVICE_TYPE table contains the airport service type name such as fixed base operations ("FBO"), limo service, etc. An AIRPORT_ SERVICE_TYPE may have many airport services associated with it. The data input to this table generally comes from contractor personnel.

15

22

Entity ARGUS_AUDIT

Card of the entity ARGUS_AUDIT

Name	ARGUS_AUDIT
Comment	An ARGUS_AUDIT table contains audit data for a service carrier, such as part 135 certificate number and a date of an audit. An ARGUS_AUDIT table may have many types of argus audit data and only one service carrier associated with it. The data input to this table generally comes from the ARGUS software.

5

Entity ARGUS_AUDIT_DATA

Card of the entity ARGUS_AUDIT_DATA

Name	ARGUS_AUDIT_DATA
Comment	An ARGUS_AUDIT_DATA table contains audit data for an aircraft including and aircraft tail number, serial number, total time on the aircraft's engines, etc. The data input to this table generally comes from the ARGUS software.

10

Entity ARGUS_RATING_NAME

Card of the entity ARGUS_RATING_NAME

Name	ARGUS_RATING_NAME
Comment	An ARGUS_RATING_NAME table contains reference names for Argus ratings (e.g., silver, platinum, etc.).

15

Entity BLACK_LIST_HISTORY

Card of the entity BLACK_LIST_HISTORY

Name	BLACK_LIST_HISTORY
Comment	An aircraft or service carrier can be blacklisted. Instead of

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| | having a field in the CARRIER or AIRCRAFT tables, a separate table is provided to keep a history of all "blacklisting" events. |

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Entity BLACK_LIST_REASON_TYPE

Card of the entity BLACK_LIST_REASON_TYPE

Name	BLACK_LIST_REASON_TYPE
Comment	A BLACK_LIST_REASON_TYPE table contains the reason type name. It may have many black list histories associated with it. The data input to this table generally comes from contractor personnel.

25

Entity CALENDAR_EVENT

Card of the entity CALENDAR_EVENT

Name	CALENDAR_EVENT
Comment	A CALENDAR_EVENT table contains a date and an explanation of each event on contractor or contractor personnel calendar.

30

Entity CARD_BALANCE

Card of the entity CARD_BALANCE

Name	CARD_BALANCE

Comment	A CARD_BALANCE table holds the last know money balance for a travel card in accordance with a particular date. Data is input to this table automatically, via an accounting application.

Entity CARRIER

Card of the entity CARRIER

Name	CARRIER
Comment	A CARRIER table contains data on all service carriers (or other aircraft service providers) world-wide including name, web site, insurance certificate, ARGUS rating, etc. A CARRIER may have many addresses associated with it, many aircraft, many contacts, many notes, many e-mail addresses, many telephones, many flight legs, and many ARGUS audits associated with it. A CARRIER may be black listed many times, or may be a preferred service carrier many times. A CARRIER may fly one type of plane and may have one corresponding entry in a public operator. A CARRIER may have been last updated by one data source. The data input to this table generally comes from the ACG software and contractor personnel.

Entity CARRIER_CONTACT

Card of the entity CARRIER_CONTACT

Name	CARRIER_CONTACT
Comment	A CARRIER_CONTACT table contains data on an service carrier's contact name and position. A

	CARRIER_CONTACT may have many e-mail addresses and many telephone numbers associated with it. A CARRIER_CONTACT may be a contact for one service carrier and may have been last updated by one data source. The data input to this table generally comes from the ACG software and contractor personnel.

Entity CARRIER_NOTE

Card of the entity CARRIER_NOTE

Name	CARRIER_NOTE
Comment	A CARRIER_NOTE table contains notes for a service carrier. A CARRIER_NOTE may have one service carrier associated with it. The data input to this table generally comes from contractor personnel.

Entity CATERING_PREFERENCE

Card of the entity CATERING_PREFERENCE

Name	CATERING_PREFERENCE
Comment	A CATERING_PREFERENCE table holds catering preferences for customers. Data is input to this table by contractor personnel.

Entity CERTIFICATE_HOLDER

Card of the entity CERTIFICATE_HOLDER

Name	CERTIFICATE_HOLDER

Comment	A CERTIFICATE_HOLDER table receives important information from an auditing partner, such as ARGUS. The table represents all of the carriers that ARGUS has audited on behalf of the contractor. This table also shares a relationship with the AIRCRAFT table in order to indicate which AIRCRAFT ARGUS believes a particular carrier operates.

Entity CITY

Card of the entity CITY

5

Name	CITY
Comment	A CITY table contains a city name. A CITY may have many addresses, many airports and one state associated with it. The data input to this table generally comes from the ACG software and contractor personnel.

Entity COMPETITIVE_SAVINGS

Card of the entity COMPETITIVE_SAVINGS

10

Name	COMPETITIVE_SAVINGS
Comment	A COMPETITIVE_SAVINGS table is used to track the amount of money a customer and/or travel card has saved against the competition up to a given date.

Entity CONTACT_TYPE

Card of the entity CONTACT_TYPE

Name	CONTACT_TYPE
Comment	A CONTACT_TYPE table is a reference table that includes a list of each type of contact (e.g., spouse, child, president, etc.). It shares an entity relationship with the CARRIER and CUSTOMER tables.

5   Entity COUNTRY

Card of the entity COUNTRY

Name	COUNTRY
Comment	A COUNTRY table contains the country name and abbreviation. A COUNTRY may have many states associated with it. The data input to this table generally comes from the ACG software and contractor personnel.

10   Entity CREDIT_CARD

Card of the entity CREDIT_CARD

Name	CREDIT_CARD
Comment	A CREDIT_CARD table contains the credit card number and expiration date of a credit card. A CREDIT_CARD may have many flights associated with it. A CREDIT_CARD may have an address, a credit card type, and a customer associated with it and may have been last updated by one data source. The data input to this table generally comes from contractor personnel.

15   Entity CREDIT_CARD_TYPE

28

Card of the entity CREDIT_CARD_TYPE

Name	CREDIT_CARD_TYPE
Comment	A CREDIT_CARD_TYPE table contains the name (Visa, Mastercard, etc.) of a credit card. A CREDIT_CARD_TYPE may have many credit cards associated with it. The data input to this table generally comes from contractor personnel.

5   Entity CUSTOMER

Card of the entity CUSTOMER

Name	CUSTOMER
Comment	A CUSTOMER table contains data on all customers world-wide including name, company, if any, business title, if any, etc. A CUSTOMER have many addresses, many credit cards, many contacts, many notes, and many e-mail addresses associated with it. A CUSTOMER may also have many flights, many telephone numbers, many travel cards, and many cases associated with it. A CUSTOMER may have a reference and a type associated with it and may have been last updated by one data source. The data input to this table generally comes from contractor personnel.

10   Entity CUSTOMER_ACTION_HISTORY

Card of the entity CUSTOMER_ACTION_HISTORY

Name	CUSTOMER_ACTION_HISTORY
Comment	A CUSTOMER_ACTION_HISTORY table contains history information about customer actions; such as the date a customer account was created, a date service for the customer was initiated or is due, the date service is completed, who a service request has been assigned to, etc.

	A CUSTOMER_ACTION_HISTORY table may have a customer case, an action type and a user (a contractor or contractor personnel) associated with it. The data input to this table generally comes from contractor personnel.

15   Entity CUSTOMER_CASE

Card of the entity CUSTOMER_CASE

Name	CUSTOMER_CASE
Comment	The CUSTOMER_CASE table contains a customer case name and customer case creation date. A CUSTOMER_CASE may have many customer action histories associated with it, one customer and one user associated with it. The data input to this table generally comes from contractor personnel.

20   Entity CUSTOMER_CONTACT

Card of the entity CUSTOMER_CONTACT

Name	CUSTOMER_CONTACT
Comment	A CUSTOMER_CONTACT table contains data on the contact's name and title. A CUSTOMER_CONTACT may have many e-mail addresses and many telephone numbers associated with it. A CUSTOMER_CONTACT may have one customer associated with it and may have been last updated by one data source. The data input to this table generally comes from contractor personnel.

25   Entity CUSTOMER_FEEDBACK

Card of the entity CUSTOMER_FEEDBACK

Name	CUSTOMER_FEEDBACK

30

Comment	A CUSTOMER_FEEDBACK table contains feedback from a particular customer with respect to a flight.

Entity CUSTOMER_FEEDBACK TOPIC

Card of the entity CUSTOMER_FEEDBACK TOPIC

Name	CUSTOMER_FEEDBACK_TOPIC
Comment	A CUSTOMER_FEEDBACK_TOPIC table is a reference table that contains topics from customer feedback postcards (e.g., quality of catering, aircraft condition, etc.).

Entity CUSTOMER_FEEDBACK_TOPIC_JOIN

Card of entity CUSTOMER_FEEDBACK_TOPIC_JOIN

Name	CUSTOMER_FEEDBACK_TOPIC_ JOIN
Comment	A CUSTOMER_FEEDBACK_TOPIC_ JOIN table is a table that allows a many-to-many entity relationship between CUSTOMER_FEEDBACK and CUSTOMER_FEEDBACK_TOPIC tables.

Entity CUSTOMER_NOTE

Card of the entity CUSTOMER_NOTE

31

Name	CUSTOMER_NOTE
Comment	A CUSTOMER_NOTE table contains a note. A CUSTOMER_NOTE may have one customer and a user that created the note associated with it. A CUSTOMER_NOTE may have been last updated by one data source. The data input to this table generally comes from contractor personnel.

Entity CUSTOMER_TYPE

5   Card of the entity CUSTOMER_TYPE

Name	CUSTOMER_TYPE
Comment	A CUSTOMER_TYPE table contains the customer type name. A CUSTOMER_TYPE may have many customers associated with it. The data input to this table generally comes from contractor personnel.

Entity DATA_SOURCE

10   Card of the entity DATA_SOURCE

Name	DATA_SOURCE
Comment	A DATA_SOURCE table contains a data source name. It is a mechanism used in many tables to show which data source last updated the information in the table. A DATA_SOURCE may have many aircraft, many service carriers, many airports, many service carrier contacts, many e-mails, many addresses, many telephones, many customers, many customer notes, many customer contacts, many credit cards, many one way aircraft, many transient aircraft and many aircraft types associated with it. The data input to this table generally comes from contractor personnel.

Entity DEDUCTION_TYPE

Card of the entity DEDUCTION_TYPE

Name	DEDUCTION_TYPE
Comment	A DEDUCTION_TYPE table holds values for different types of deductions that can be applied to the balance associated with a customer or travel card. Data input to this table comes from contractor personnel.

5

Entity EMAIL

Card of the entity EMAIL

Name	EMAIL
Comment	A EMAIL table contains the email address and a primary email address indicator. An EMAIL may have one customer, one service carrier, one service carrier contact, or one customer contact associated with it. An EMAIL may have been last updated by one data source. The data input to this table generally comes from the ACG software and contractor personnel.

10

Entity EVENT_TYPE

Card of the entity EVENT_TYPE

Name	EVENT_TYPE
Comment	An EVENT_TYPE table holds customer and contractor feedback types to be used in relation with an AIRCRAFT_HISTORY table.

Entity FLIGHT

Card of the entity FLIGHT

Name	FLIGHT
Comment	A FLIGHT table contains information about a flight including the start and end times, a round-trip indicator, a number of passengers, etc. A FLIGHT may have many flight legs and many travel card histories associated with it. A FLIGHT may also have a customer, a user, a flight state, a travel card, a credit card and an aircraft category associated with it. The data input to this table generally comes from contractor personnel.

5

Entity FLIGHTLEG_ALTERNATE

Card of the entity FLIGHTLEG_ALTERNATE

Name	FLIGHTLEG_ALTERNATE
Comment	A FLIGHTLEG_ALTERNATE table is associated with one or more a FLIGHT_LEG tables. Each FLIGHT_LEG may have many FLIGHTLEG_ALTERNATEs. If there is a cancellation or mechanical problem associated with a FLIGHT_LEG, a contractor already has a record of multiple equally suited aircraft which may be used as an alternative.

10

Entity FLIGHT_DATA

Card of the entity FLIGHT_DATA

34

Name	FLIGHT_DATA
Comment	A FLIGHT_DATA table contains data on all flights tracked by the FAA (a filed or recorded flight plan). It contains information such as a tail number, flight status, origin and destination airports, start and end times and current positional information such as longitude, latitude, altitude, heading and speed. This information is received by satellite every 3 minutes or less and is processed into the system's normalized database. The data input to this table come from the RLM software.

Entity FLIGHT_LANDING

5   Card of the entity FLIGHT_LANDING

Name	FLIGHT_LANDING
Comment	A FLIGHT_LANDING table is populated by system software that processes flights from the FLIGHT_DATA table with a flight status of "L". It contains information such as tail number, origin and destination airport, start and end times and a date and time of the landing (in ZULU format).

Entity FLIGHT_LEG

10   Card of the entity FLIGHT_LEG

Name	FLIGHT_LEG
Comment	A FLIGHT_LEG table contains data such as origin and destination airport, start and end times, service carrier quote, etc. A FLIGHT_LEG may have many grouped flights, many one ways flights, many aircraft watch lists, and many aircraft saved searches associated with it. A FLIGHT_LEG may have one aircraft, one service carrier, one flight and one upgrade type associated with it. The data input to this table

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	generally comes from contractor personnel.

Entity FLIGHT_STATE

15   Card of the entity FLIGHT_STATE

Name	FLIGHT_STATE
Comment	A FLIGHT_STATE table contains the flight state name. The flight state may have many flights associated with it. The data input to this table generally comes from contractor personnel.

Entity FRACTIONAL_AIRCRAFT_JOIN

20   Card of the entity FRACTIONAL_AIRCRAFT_JOIN

Name	FRACTIONAL_AIRCRAFT_JOIN
Comment	A FRACTION_AIRCRAFT_JOIN table is an internal table that allows a "many to many" relationship between fractional aircraft and fractional companies. It links an aircraft with a fractional company, so ultimately one aircraft can be linked to many companies and one company can be linked to many aircraft.

Entity FRACTIONAL_COMPANIES

25   Card of the entity FRACTIONAL_COMPANIES

Name	FRACTIONAL_COMPANIES
Comment	A FRACTIONAL_COMPANIES table contains the name of a fractional company. It may have many fractional aircraft associated with it. The data input to this table generally comes from contractor personnel.

Entity FRACTIONAL_OWNERS

30   Card of the entity FRACTIONAL_OWNERS

36

Name	FRACTIONAL_OWNERS
Comment	A FRACTIONAL_OWNERS table includes a list of a contractor's fractional ownership competitors. Each aircraft in the contractor's inventory may be tracked as to whether it is also used by these fractional ownership companies. The contractor may then conduct a competitive analysis with respect to particular situations.

Entity GLOBAL_PARAMETERS

5   Card of the entity GLOBAL_PARAMETERS

Name	GLOBAL_PARAMETERS
Comment	A GLOBAL_PARAMETERS table is used to store all of the contractor's persistent global parameters, such as strings, colors, labels, numbers, monetary values, taxes, and percentages. These values are not hard-coded into software and thus can be modified at run-time by just changing the appropriate database fields. The USER_PARAMETERS table shares a relationship to this table in that it "inherits" from this table. The software of the system has certain functions that look for a "per user" value of the user parameters and, if it cannot find any, the software functions will default to the global parameters.

Entity GROUND_TRANSPORTATION

10   Card of the entity GROUND_TRANSPORTATION

Name	GROUND_TRANSPORTATION

Comment	A GROUND_TRANSPORTATION table includes information related to the type of ground transportation that may be supplied for a flight leg (e.g., who is meeting the plane, this person's phone number, etc.).

Entity GROUND_TRANSPORTATON_TYPE

Card of the entity GROUND_TRANSPORTATION_TYPE

5

Name	GROUND_TRANSPORTATION_ TYPE
Comment	A GROUND_TRANSPORTATION_ TYPE table is a reference table that includes the types of ground transportation to be supplied for a flight leg (e.g., car service, taxi, private party, etc.).

Entity GROUPED_FLIGHT

Card of the entity GROUPED_FLIGHT

10

Name	GROUPED_FLIGHT
Comment	A GROUPED_FLIGHT table contains data such as the time a group flight is created and an overall cost of the group flight. A GROUPED_FLIGHT may have many flight legs associated with it. The data input to this table generally comes from contractor personnel.

Entity GROUPED_FLIGHT_JOIN

Card of the entity GROUPED_FLIGHT_JOIN

38

Name	GROUPED_FLIGHT_JOIN
Comment	A GROUPED_FLIGH_ JOIN table is an internal table that allows a "many to many" relationship between grouped flights and flight legs. It contains primary keys from the GROUP_FLIGHT_TABLE and the FLIGHT_LEG table. The data input to this table generally comes from contractor personnel.

Entity MAP_LAYER

5   A "layer" is a visualization of the MAP_LAYER entity. Persistent fields in the MAP_LAYER are used to determine the visual characteristics of the layer as well as the elements that are actually displayed via a user interface (for instance, via a user interface of a command center module.) A layer may be a weather overlay layer, a saved search layer (which constitutes search criteria to be

10   executed in order determine which tail numbers are displayed), or a watch list layer (which constitutes a static list of tail numbers to be watched). Further, by employing layers, a given aircraft can be displayed to a user together with its base, departure, and destination airports as well as its route.

Card of the entity MAP_LAYER

15

Name	MAP_LAYER
Comment	A MAP_LAYER table includes all of the parameters necessary to keep track of a given map layer in the mapping screens of the contractor's command center application. These parameters include visibility, color, font, size, active, proposed, landed, transient, one-way flights and origins, destinations and base airports. This table also includes aspects of labeling.

Entity MARKETING_EVENT

Card of the entity MARKETING_EVENT

39

Name	MARKETING_EVENT
Comment	A MARKETING_EVENT table may be used to store all marketing events that a contractor has sent to customers, potential customers, and to the public generally.

Entity MARKETING_EVENT_BATCH

5   Card of the entity MARKETING_EVENT_BATCH

Name	MARKETING_EVENT_BATCH
Comment	A MARKETING_EVENT_BATCH table may be used to split customers, potential customers, and the public generally into batches for a marketing event.

Entity MARKETING_EVENT_CUSTOMERS

10   Card for the entity MARKETING_EVENT_CUSTOMERS

Name	MARKETING_EVENT_CUSTOMERS
Comment	A MARKETING_EVENT_ CUSTOMERS table may be used to store names or identifications of customers that belong to a marketing event.

Entity MARKETING_EVENT_MEDIUM

15   Card for the entity MARKETING_EVENT_MEDIUM

40

Name	MARKETING_EVENT_MEDIUM
Comment	A MARKETING_EVENT_MEDIUM table may be used to store the types of material that should be distributed during a marketing event.

Entity MARKETING_EVENT_TYPE

5   Card for the entity MARKETING_EVENT_TYPE

Name	MARKETING_EVENT_TYPE
Comment	A MARKETING_EVENT_TYPE table may be used to store different types of marketing events and the SQL used to retrieve customers for a particular type.

Entity ONE_WAY

10   Card of the entity ONE_WAY

Name	ONE_WAY
Comment	A ONE_WAY table contains the start and end times of a one way flight, the origin and destination airports of the one way flight, a booked indicator, etc. A ONE_WAY is one aircraft on one flight leg and may have been last updated by one data source. The data input to this table generally comes from the ACG software and contractor personnel.

Entity OWNER

15   Card of the entity OWNER

Name	OWNER
Comment	An OWNER table may be employed as an intermediate import table which specifies all of the aspects of an owner of an aircraft.

Entity PASSENGER

5   Card of the entity PASSENGER

Name	PASSENGER
Comment	A PASSENGER table may be used to store the names or identifications of passengers that have been included in a flight for a customer. Data is input to this table by contractor personnel.

Entity PASSENGER_MANIFEST

10   Card of the entity PASSENGER_MANIFEST

Name	PASSENGER_MANIFEST
Comment	A PASSENGER_MANIFEST table may be used to store the names or identifications of all the passengers for each flight leg. A passenger may be an existing customer or a new name associated with a single flight leg. Data is input to this table automatically, via an application.

Entity PLANE_TYPES

15   Card of the entity PLANE_TYPES

Name	PLANE_TYPES
Comment	A PLANE_TYPES table contains the plane type name. A PLANE_TYPES may have many service carriers associated with it. The data input to this table generally comes from contractor personnel.

Entity PREFERRED_LIST

5   Card of the entity PREFERRED_LIST

Name	PREFERRED_LIST
Comment	Same as the BLACK_LIST table concept except that this is for indicating a "preferred" status.

Entity PREFERRED_LIST_REASON_TYPE

10   Card of the entity PREFERRED_LIST_REASON_TYPE

Name	PREFERRED_LIST_REASON_TYPE
Comment	A PREFERRED_LIST_REASON_TYPE table contains the reason type name. It may have many preferred lists associated with it. The data input to this table generally comes from contractor personnel.

Entity PROSPECT_RATING

15   Card of the entity PROSPECT_RATING

Name	PROSPECT_RATING
Comment	A PROSPECT_RATING table may be used to store values associated with prospective travel card customers.

Entity PUBLIC_AIRCRAFT

20   Card of the entity PUBLIC_AIRCRAFT

43

Name	PUBLIC_AIRCRAFT
Comment	A PUBLIC_AIRCRAFT table includes aircraft information. It is an intermediate import table that serves as destination of scheduled imports of information from external data sources. After the information is imported, the values of this table get imported into the AIRCRAFT table with the appropriate DATA_SOURCE flags set.

Entity PUBLIC_AIRPORTS

5   Card of the entity PUBLIC_AIRPORTS

Name	PUBLIC_AIRPORTS
Comment	A PUBLIC_AIRPORT table includes airport information. It is an intermediate import table that serves as destination of scheduled imports of information from external data sources. After the information is imported, the values of this table get imported into the AIRPORT table with the appropriate DATA_SOURCE flags set.

Entity PUBLIC_AVAILABILITY

10   Card of the entity PUBLIC_AVAILABILITY

Name	PUBLIC_AVAILABILITY
Comment	A PUBLIC_AVAILABILITY table includes availability information. It is an intermediate import table that serves as destination of scheduled imports of information from external data sources. After the information is imported, the values of this table get imported into the ONE_WAY and/or TRANSIENT tables with the appropriate DATA_SOURCE flags set.

Entity PUBLIC_OPERATOR

44

Card of the entity PUBLIC_OPERATOR

Name	PUBLIC_OPERATOR
Comment	A PUBLIC_OPERATOR table includes carrier information. It is an intermediate import table that serves as destination of scheduled imports of information from external data sources. After the information is imported, the values of this table get imported into the CARRIER table with the appropriate DATA_SOURCE flags set. Note that while some external sources use the terminology "OPERATOR", contractors may use the term "CARRIERS" to describe the concept of the entity that operationally manages the aircraft.

5   Entity PUBLIC_STDCRAFT

Card of the entity PUBLIC_STDCRAFT

Name	PUBLIC_STDCRAFT
Comment	A PUBLIC_STDCRAFT table includes information associated with de-normalized aircraft type, aircraft category, aircraft manufacturer, etc. It is an intermediate import table that serves as destination of scheduled imports of information from external data sources. After the information is imported, the values of this table get imported into the AIRCRAFT_TYPE and/or AIRCRAFT_CATEGORY tables with the appropriate DATA_SOURCE flags set.

10   Entity REFERRED_BY

Card of the entity REFERRED_BY

Name	REFERRED_BY
Comment	A REFERRED_BY table contains a reference name (Wall St. Journal, etc.). A REFERRED_BY may have many customers associated with it. The data input to this table generally

	comes from contractor personnel.

15   Entity REPORT

Card of the entity REPORT

Name	REPORT
Comment	A REPORT table includes all reports that may be printed or accessed by contractor personnel. This allows contractor administration to change a report template in the database such that contractor personnel has immediate access to the new report. A report object is contained in a report_template field. Data is input to this table by contractor administration.

20   Entity SECURITY_LEVEL

Card of the entity SECURITY_LEVEL

Name	SECURITY_LEVEL
Comment	A SECURITY_LEVEL table contains a security level name. A SECURITY_LEVEL may have many users associated with it. The data input to this table generally comes from contractor personnel.

25   Entity SHIPMENT_METHOD

Card of the entity SHIPMENT_METHOD

Name	SHIPMENT_METHOD

Comment	A SHIPMENT_METHOD table is a reference table that describes various methods a contractor may use to ship things to customers (e.g., FedEx, UPS, etc.).

Entity STANDARD_VERBAGE

Card of the entity STANDARD_VERBAGE

Name	STANDARD_VERBAGE
Comment	A STANDARD_VERBAGE table may be used as a repository of verbiage used in reports and labels.

Entity STATE

Card of the entity STATE

Name	STATE
Comment	A STATE table contains the state name and abbreviation. A STATE may have many cities and one country associated with it. The data input to this table generally comes from the ACG software and contractor personnel.

Entity TELEPHONE

Card of the entity TELEPHONE

Name	TELEPHONE
Comment	A TELEPHONE table contains data on telephone numbers for service carrier contacts, service carriers, customer contacts, customers, and airport services including telephone number and a primary telephone number indicator. A TELEPHONE may have one service carrier contact, one

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	service carrier, one customer contact, one customer, may one airport service, and one telephone type associated with it. A TELEPHONE may have been last updated by one data source. The data input to this table generally comes from the ACG software and contractor personnel.

Entity TELEPHONE_TYPE

Card of the entity TELEPHONE_TYPE

20

Name	TELEPHONE_TYPE
Comment	A TELEPHONE_TYPE table contains a telephone type name. A TELEPHONE_TYPE may have many telephones associated with it. The data input to this table generally comes from the ACG software and contractor personnel.

Entity TIME_ZONE

Card of the entity TIME_ZONE

25

Name	TIME_ZONE
Comment	A TIME_ZONE table contains a time zone name and its hours (according to ZULU). A TIME_ZONE may have many airports associated with it. The data input to this table generally comes from contractor personnel.

Entity TRANSIENT

Card of the entity TRANSIENT

30

Name	TRANSIENT
Comment	A TRANSIENT table contains the start and end times of a transient state, booked indicator, etc. A TRANSIENT plane may have one aircraft and one airport associated with it and may have been last updated by one data source. The data input to this table generally comes from the ACG software

48

	and contractor personnel.

Entity TRAVEL_CARD

Card of the entity TRAVEL_CARD

35

Name	TRAVEL_CARD
Comment	A TRAVEL_CARD table contains a travel card number. A TRAVEL_CARD may have many travel card customers, many travel card histories, and many flights associated with it. The data input to this table generally comes from contractor personnel.

Entity TRAVEL_CARD_CUSTOMER_JOIN

Card of the entity TRAVEL_CARD_CUSTOMER_JOIN

40

Name	TRAVEL_CARD_CUSTOMER_JOIN
Comment	A TRAVEL_CARD_CUSTOMER_JOIN table is an internal table that allows a "many to many" relationship between travel cards and customers. It contains primary keys from a TRAVEL_CARD table and a CUSTOMER table as well as a primary travel card indicator for a customer. The data input to this table generally comes from contractor personnel.

Entity TRAVEL_CARD_HISTORY

Card of the entity TRAVEL_CARD_HISTORY

45

Name	TRAVEL_CARD_HISTORY
Comment	A TRAVE_ CARD_HISTORY table contains the date, amount and deposit indicator for a travel card. A TRAVEL_CARD_ HISTORY may have one travel card and one flight associated with it. The data input to this table generally comes from contractor personnel.

Entity TRAVEL_CARD_REFERRAL

Card of the entity TRAVEL_CARD_REFERRAL

Name	TRAVEL_CARD_REFERRAL
Comment	A TRAVEL_CARD_REFERRAL table includes the name or identification of a customer who may refer other customers, such as a primary travel card holder or a customer on a travel card account

5

Entity UPGRADE_BALANCE

Card of the entity UPGRADE BALANCE

Name	UPGRADE_BALANCE
Comments	An UPGRADE_BALANCE table includes a last known upgrade balance amount associated with a customer or travel card for a given date. Data may be input to this table automatically via an accounting application.

10

Entity UPGRADE_SAVINGS

Card of the entity UPGRADE_SAVINGS

Name	UPGRADE_SAVINGS

| Comment | An UPGRADE_SAVINGS table may be used to track how much money a customer or travel card has saved because of complimentary upgrades up to a given date. Data may be input to this table automatically, via an accounting application. |

Entity UPGRADE_TYPE

Card of the entity UPGRADE_TYPE

5

Name	UPGRADE_TYPE
Comment	A UPGRADE_TYPE table contains an upgrade type name. An UPGRADE_TYPE may have many flight legs associated with it. The data input to this table generally comes from contractor personnel.

Entity USERS

Card of the entity USERS

10

Name	USERS
Comment	A USERS table contains a contractor personnel name, user-name, password and email address. A USER may have many customer notes, many flights, many customer cases, many customer actions, many aircraft watch lists, many aircraft saved searches, many user map configurations, many user parameters and one security level associated with it. The data input to this table generally comes from contractor personnel.

Entity USER_MAP_CONFIGURATION

Card of the entity USER_MAP_CONFIGURATION

Name	USER_MAP_CONFIGURATION
Comment	A USER_MAP_CONFIGURATION table is an encapsulation of two or more MAP_LAYER tables. In this manner, a user may choose layers A, B, and C as a named configuration and layers D, C, and E as a different one.

5   Entity USER_PARAMETERS

Card of the entity USER_PARAMETERS

Name	USER_PARAMETERS
Comment	A USER_PARAMETERS table is a table that may "inherit" from the GLOBAL_PARAMETERS table. Any value in the GLOBAL_PARAMETERS table can be over-written on a per user basis in the USER_PARAMETERS table.

10   Entity WEATHER_LAYER

Card of the entity WEATHER_LAYER

Name	WEATHER_LAYER
Comment	A WEATHER_LAYER table may be used to store weather maps and may be associated with a MAP_LAYER. Any layer that points to a WEATHER_LAYER is meant to exclusively render a weather map in that layer.

15   Entity WIND_SPEED

Card of the entity WIND_SPEED

Name	WIND_SPEED
Comment	A WIND_SPEED table may be used to perform flight calculations. In order to calculate the head and tail wind components of a flight, one needs to have wind speeds and directions at certain altitudes and coordinates.

Enity ZIP_CODE

Card of the entity ZIP_CODE

Name	ZIP_CODE
Comment	A ZIP_CODE table includes zip code information for all the zip codes in the United States. The table also includes related information such as city, state, county, area code, etc.

5

Each of the entities above further includes one or more attributes. For example, an AIRPORT entity may have the following attributes:

AIRPORT	
<u>AIRPOR ID</u>	<u>AUTO ID</u>
AIRPOR_NAME	LONG_NAME
AIRPOR_NUMBER_OF_RUNWAYS	SMALL_NUMBER
AIRPOR_LR_LENGTH	SMALL_NUMBER
AIRPOR_LR_SURFACE	MEDIUM_NUMBER
AIRPOR_ELEVATION	SMALL_NUMBER
AIRPOR_PUBLIC	BOOLEAN
AIRPOR_LATITUDE	COORDINATE
AIRPOR_LONGITUDE	COORDINATE
AIRPOR_ABBREV	SHORT_NAME
AIRPOR_TOWER_NUMBER	MEDIUM_NAME
AIRPOR_FAA_CODE	SHORT_NAME
AIRPOR_ICAO_CODE	SHORT_NAME
AIRPOR_IATA_CODE	SHORT_NAME
AIRPOR_MAP	BMP

10   Examples of other tools that may be used to develop the database **120**

include but are not limited to: Borland® Delphi™ 5.0 Enterprise, Sybase® PowerDesignor 7.5, Microsoft® Project 2000, Microsoft® Visio 2000, Microsoft® Visual Sourcesafe™ 6.0 and Client Tools. By using these software and middleware tools, and the database 120, a flight command center application is

5   created that enables the contractor 102 and contractor personnel (sometimes referred to herein as "users") to keep track of customers, aircraft, and aircraft service providers; find aircraft and aircraft service providers by providing real-time search criteria; price and schedule flights for customers; keep track of customer flights and flight legs; integrate flight and customer information with an

10   accounting system; keep track of airports and airport and other travel services; keep track of all active, proposed, and landed aircraft in real-time; keep track of all reported one-way and transient aircraft; keep track of status histories; and present reports on all areas of the contractor's business.

Fig. 2 is an illustration of a graphical user interface which may be used to

15   provide private air travel in accordance with another embodiment of the invention. The graphical user interface 200 provides a contractor 102 (or other user) with a screen 201 that will allow the contractor to find and/or enter all information for a customer including one or more credit card numbers, addresses, phone numbers, email addresses, contacts (if the customer is a corporate entity) as

20   well as information regarding the contacts, aircraft preferences, and all other preferences. Through the interface 200, the contractor may create actions that need to be taken on behalf of a customer, such as sending flight information or other travel information to or for the customer, or sending follow-up information on a particular flight. A contractor can create an action and assign it to someone

25   else to complete, such as to contractor personnel or one or more travel service providers 109. All the users of the interface 200 (including contractor personnel and administrators) with proper security clearance can view an action task list and see tasks that are assigned to each user.

The graphical user interface 200 also includes an electronic link to a

module which provides a flight entry interface (or screen) that allows a contractor or contractor personnel to create a new flight for a customer. Via the flight entry screen, the contractor may select which of the customer's credit cards to charge the flight to, calculate the cost of the flight, and schedule one or more flight legs.

5   The contractor may also view all data related to flights the customer has scheduled with the contractor. Once a flight is created through the flight screen, it is automatically entered into a flight calender which may be displayed by a related interface. Similarly, the contractor may edit data related to a flight and save the changes to the system. The flight calender will automatically be updated

10   in accordance with the changes. The interface includes pull down menus 202, 203, 204, 205, 206, and 207 that provide a user with electronic links to modules which provide a flight information interface, an airport locator interface, an aircraft locator interface, an administrative information interface, a finance information interface, and a reporting interface respectively.

15   Fig. 3 is an illustration of an aircraft locator interface for conducting a search using a search and notification module in accordance with another embodiment of the invention. The search and notification module is designed such that, by entering aircraft search criteria, contractor personnel may alleviate themselves of the burden of constantly tracking aircraft. An aircraft search can be

20   performed in a number of modes including an "on-demand" mode and a "real-time" mode. In the real-time mode aircraft searching is performed constantly. An on-demand search executes an aircraft search at a given moment on a one time basis. (However, conducting an on-demand search does not prevent a user form saving the search criteria and re-executing the search at pre-determined

25   intervals.) A real-time search emulates a user re-executing an on-demand search at pre-determined intervals. In this manner, a user may automatically be notified that a new aircraft which satisfies the search criteria has been located. The search criteria for an aircraft search may include: aircraft tail number; desired time frame of the search; search categories (including flight statuses such as active, proposed,

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landed, one-way and transient); current position of desired aircraft, base airport location; departure airport location, destination airport location, desired aircraft type; desired aircraft features, desired ARGUS rating of aircraft; and desired aircraft range. Additionally, each of the criteria entered for the search may take

5   one or more values. Thus, a user may select two suitable aircraft types as is shown in the embodiment of Fig. 51.

The interface **300** of Fig. 3 enables a contractor or contractor personnel to view all data related to flight legs that need aircraft, all data related to flights that have been assigned aircraft, and all data related to flights that have been canceled

10·   for each day, each week, each month, or any other time period. The interface **300** provides an electronic link to a module which provides an interface **301** for selecting search criteria, a module which provides an interface **302** for viewing search results, a module which provides an interface **303** for creating a watch list for designating particular aircraft to be tracked, and a module which provides an

15   interface **304** for viewing the aircraft tracked via the watch list. As noted above, the search criteria module **301** may also provide an interface **310** for searching for aircraft that have an active or proposed flight status and an interface **311** for searching for aircraft having a landed status. Each of the interfaces **310** and **311** may include a field **305** for entering a search name in order to save search results,

20   a field **306** for entering the name of an airport in order to search for aircraft within a designated radius of the airport, a field **307** for entering the name of a location (airport, city or state) from which a particular aircraft departed, a field **308** for entering the name of a location (airport, city or state) to which a particular aircraft is scheduled to arrive, a field **309** for entering the name of a home base location

25   for an aircraft (airport, city or state), a field **312** for entering a tail number associated with an aircraft, and a field **313** for entering a range, in miles, over which the search should be conducted. The interfaces **310** and **311** may also provide fields **314** for designating a time frame associated with the search, fields **315** for designating one or more flight status categories associated with the search,

fields **316** for designating an aircraft type associated with the search, fields **317** for designating feature associated with an aircraft or flight **317**, and fields **318** for designating one or more ARGUS ratings associated with an aircraft.

Fig. 4 is an illustration of an interface by which a user may view the results

5   of the search conducted in accordance with module **302** of the embodiment of Fig. 3. The interface **400** includes color-coded fields for displaying a flight status **401**, a tail number **402**, an aircraft model number **403**, an aircraft type category **404** (such as heavy jet, turbo propeller aircraft, multiple piston aircraft, etc.), the name of an airport from which an aircraft departed **405**, a name of a city from which an

10   aircraft departed **406**, a name of a state from which an aircraft departed **407**, a name of a destination airport **408**, a name of a destination city **409**, a name of a destination state **410**, a base airport for an aircraft **411**, the name of the city of the base airport **412** and other pertinent information. The interface **400** may also include fields for displaying the number of aircraft found by the search **413** and

15   the number of aircraft selected via the interface **400** for further tracking **414**.

Fig. 5 is an illustration of a aircraft location display interface in accordance with the embodiment of Fig. 3. The aircraft location display interface **500** displays the location of all the aircraft located using the interfaces of Figs. 3 and 4 in, for example, the form of tail numbers **501**. The aircraft location display interface **500**

20   includes a modules **503** and **504** by which a contractor or other user may choose to view the display in grid form (**503**) or map form (**504**). The aircraft display interface **500** may also include a field **505** for entering and displaying the name of a base airport for an aircraft, a field **506** for entering and displaying a geographical radius over which the search was conducted, and field for

25   designating that labels (here in the form of tail numbers) may be shown **507** or overlapped **508**. The aircraft locator display interface may also include a field **509** for displaying a number of aircraft located as a result of a search.

Fig. 6 is an illustration of airport locator display interface in accordance

with the embodiment of Fig. 3. The airport locator display interface **600** is similar to the aircraft locator display interface **500** in all regards except that it is used to display the locations of airports, designed by an airport codes, for example airport codes **602**, that provide connections for flights in association with a

5   particular airport designated by the contractor. The airport locator display interface **600** includes a field **601** for entering and displaying the name of the particular airport designated by the contractor.

Fig. 7 is an illustration of a graphical user interface for tracking one or more aircraft in accordance module **303** of Fig. 3. The interface **700** includes a

10   field **701** for entering a layer name indicating a span of information to be tracked, a field **702** for entering a name of the person requesting the track, and a field **703** for indicating a layer type (such as "saved search" or "saved watch list"). The interface **700** may also include a field **704** for indicating the geographical layer or region over which the tracking should occur (such as major US cities, Mexico,

15   Canada, etc.). A contractor, contractor personnel or other user may indicate one or more geographical layers or regions, for example regions indicated at **707**, over which to track a flight. The interface may further include a field **705** for indicating what properties, such as properties **706**, the user would like to see displayed as a result of the tracking request (such as destination airport, departure airport, base

20   airport, active aircraft, proposed aircraft, landed aircraft, one-way aircraft, transient aircraft, labels, and course.)

Fig. 8 is an illustration of an interface for viewing the aircraft tracked in accordance the embodiment of Fig. 7 and module **304** of Fig. 3. According to this embodiment, a contractor or other user may view one or more aircraft tracked

25   according to information entered through the interface of Fig. 7 over a large area, such as the United States. If a user has indicated a particular geographical region, the region will be displayed as is illustrated by Fig. 9.

Fig. 10 is an illustration of a web page for providing a graphical user interface to a customer in accordance with another embodiment of the present

58

invention. The graphical user interface **1000** may provide communication links to a plurality of modules, any one of which may be accessed by clicking on one of a plurality of links **1001-1016**. The modules provide graphical user interfaces for among other things, displaying information related to the private air travel

5   contractor, via links **1011-1016** and **1006-1007**, including travel card information (through link **1012**), and information relevant to a private air travel customer's personal account. A customer may also access information regarding flight requests through link **1017**, information regarding weather reports through link **1008**, and information regarding area maps via link **1009**. A customer may access

10   an airport locator through link **1010**.

Additionally, a customer may access a module that provides a request interface containing fields for entering private aircraft travel request information through link **1002**, and access another module that provides a payment interface by which a customer may choose a payment method or access legal information

15   about the private air travel business through link **1005**. A customer may also enter payment information through the interfaces accessed through link **1005**. Other links may be included provide interfaces that will allow a customer to update his or her customer profile information, such as their contact information and catering and flight preferences. Links may also be included to provide

20   interfaces that enable a travel card customer to quickly enter new flight requests and select origin, destination, and aircraft preferences as well as the number of passengers and catering preferences for each leg of a flight. Customers may also be provided with links that enable each customer to track an aircraft or flight. A customer may access an interface that displays frequently asked questions and

25   the answers to those questions through link **1004**.

The interface **1000** may also include an aircraft service provider login to the contractor's system through link **1003**. Via this link, an interface may be provided to enable an aircraft service provider to update the aircraft service provider's profile information and enter future open flight legs and transient flights which

will then be immediately available to contractor personnel. Link **1001** may provide access to an interface that includes further information about private air travel.

5   Fig. 11 is an illustration of a travel card in accordance with an embodiment of the present invention. A travel card **1100** includes a first face **1110** including an identification number **1101** thereon for identifying a customer authorized to use the travel card **1100** and a designation **1102** representing a pre-purchased allotment of aircraft service. The designation **1102** may be in the form of a color, such as gold or platinum, or as shown here, it may be embossed on the first face

10   **1110** of card as is the contractor's name **1103**. The card **1100** may also include, on the first face **1110** or on a second face (not shown) a designation representing a discount rate for private aircraft service or a designation representing a pre-determined number of private aircraft service upgrades that are redeemable at the option of the customer. The first face **1110** or second face may also include a

15   magnetic strip that enables the card to be read by a magnetic strip reader. In a related embodiment, the card **1100** may also include a processor and memory **1104** (generally disposed between the first face **1110** and the second face).

In one embodiment, the memory of the travel card **1100** may retain data pertinent to the customer's private aircraft service preferences, such as

20   entertainment preferences, dining preferences, aircraft preferences, post-flight travel preferences (including hotel accommodations, car rentals, etc.) and pre-flight travel preferences and accommodations (including flight insurance, limo service, etc.). The memory may also retain data pertinent to the customer's medical preferences, including the name of a preferred primary care practitioner

25   or hospital and treatments. In related embodiments, the processor may include program code for establishing a communication link to a computer network when the code is read by a computer on an aircraft, in a car, at home or in a hotel room. The communication may include an electronic link to the Internet, or an electronic link to a private air travel service contractor via the Internet or other network.

60

Fig. 12 is a flow chart illustrating a method for providing private air travel in accordance with an embodiment of the present invention. A contractor establishes **1201** a pool of aircraft service providers. Though the pool of aircraft service providers may be limitless, it is preferred to direct most private air travel

5   requests to a smaller subset of preferred aircraft service providers within the pool. This insures maximum customer satisfaction in that the aircraft service provider service is known to be reliable and safe. One or more aircraft service requests are obtained **1202** from one or more customers. The customer supplies certain specified parameters such as destination, aircraft type, preferred time of arrival,

10   catering requirements, and entertainment preferences (e.g., music the customer would like to listen to on the flight, movies the customer would like to watch on the flight, reading material the customer would like to have on the flight), etc. An aircraft is selected **1203** from the pool of aircraft service providers in accordance with the parameters supplied by the customer. The aircraft is matched **1204** to the

15   aircraft service request for the performance of the request in a manner that minimizes the occurrence to passenger-less flights as described in greater detail above.

Fig. 13 is a flow chart illustrating the method of Fig. 12 detailing pre-flight procedures. A customer request is received **1301** by the contractor through any

20   communication medium. The request may come via a graphical user interface, such as a web page, via a facsimile machine, via e-mail, via a telephone or via the customer's personal appearance at the contractor's place of business. If the customer is a travel card program participant, the customer will have been provided with a pre-purchased allotment of private air travel and customer

25   specific flight itineraries will be obtained **1302** from the database **120** and updated if necessary.

As discussed above with respect to Fig. 11, as a member of the travel card program the customer may pre-purchase allotments of private air travel having several different values. For example, the customer may pre-purchase $100,000 of

private air travel, $250,000 of private air travel, or $500,000 of private air travel. These three different allotment values may correspond to a travel card that is silver, gold and platinum respectively. Further, by participating in the travel card program the customer may be guaranteed pre-determined hour flight discount

5   rates which are dependent upon the allotment value. The flight discount rates may be determined by the type of aircraft the customer prefers, i.e., a light weight aircraft may have one hourly rate associated with it, a mid-size aircraft may have another hour discount rate associated with it, and a heavy aircraft may have a third discount rate associated with it.

10   Further, a customer may be guaranteed a predetermined number of flight upgrades which may also be determined by the value of the pre-purchased allotment. Similarly, by participating the travel card program, a customer may be guaranteed a pre-determined number of frequent flyer upgrades and a dedicated customer service representative, both of which may be determined by the value of

15   the pre-purchased allotment of private air travel. The guaranteed hourly flight rate discounts, the pre-determined flight upgrades, the frequent flyer upgrades, and the identification of the dedicated customer service representative may be indicated on a first or second face of the travel card in the manner discussed above. Additionally, the discounts, upgrades and dedicated customer service

20   representative identification may be indicated by information read by a magnetic strip reader, or by information stored in a processor and memory which may be included with the travel card. If the customer is not a travel card program participant, customer specific flight itineraries are obtained 1310 from the customer and entered into the database 120.

25   The contractor will execute a comprehensive search 1303 to find a suitable aircraft that might be available to make the trip. The contractor may focus on finding an aircraft that would have made the trip to the customer's preferred destination without passengers or an aircraft that may be sitting idle at the customer's preferred boarding location. The contractor also focuses on finding

62

aircraft and aircraft service providers that have good safety and maintenance records. Additionally, the contractor will consider the aircraft size, the aircraft's comfort, entertainment and engineering features, the aircraft's passenger capacity, and the aircraft's flight range.

5   A quote based on the customer's requested itinerary (e.g. type of aircraft, entertainment preferences, etc.) is generated **1304** and delivered **1305** to the customer. The quote is generated using a software package, such as NAVPAK, and the contractor's in-house expertise. The customer can reject the quote, accept the quote, or reject the quote and alter the itinerary. When the quote has been

10   accepted, appropriate aircraft is selected **1306** from one or more alternative aircraft service providers. The aircraft is selected with respect to satisfying mission parameters such as the requested itinerary and price, as well as availability of aircraft.

       The contractor then secures **1307** the selected aircraft for the flight. This is

15   accomplished by receiving a confirmation from the aircraft service provider that the aircraft is designated for the flight, and may also include a confirmation that the aircraft and/or flight has been insured. If the customer is not participating in a travel card program provided by the contractor, then the customer's personal preferences (itineraries) are also secured in process **1307**. Finally, a summary of

20   the flight mission is sent **1308** to the aircraft service provider.

       Fig. 14 is a flow chart illustrating the method of Fig. 12 detailing post-flight procedures. The aircraft service provider performs the entire flight mission using the specified aircraft (including flight operations, catering, and aircraft maintenance.) Following performance of the flight mission, an appropriate

25   receivable is generated **1401** in an accounting system. If the customer is participating in the travel card program, the value of the flight mission is debited **1402** from the pre-purchase allotment of private air travel that the customer's card indicates. If not, an invoice may be sent to the customer or a credit card may be charged **1403** directly. An appropriate payable is also generated **1404** to the

63

aircraft service provider and a summary flight status report is obtained **1405**. Payment to the aircraft service provider is facilitated **1406** based on the flight status report and a satisfaction survey form is generated **1407** and sent to the customer.

5   Figs. 15-52 are graphical user interfaces that may be used in conjunction with a computer based flight center command module in accordance with one embodiment of the invention. Many of the interfaces illustrated in Figs. 15-52 have been provided with annotations, and are generally self-explanatory. These interfaces provide a contractor, contractor personnel or other user with means for

10   accessing the entities of the database described with respect to Fig.1 as well as their related attributes.

Figs. 15-21 are illustrations showing interfaces by which a user may login to the private aircraft contractor's system and navigate through the command center application. Fig. 15 is an illustration showing login icon and Fig. 16 is an

15   illustration showing a login interface by which a user may login into the command center application by providing a password. The user may also designate a database of the system he or she wishes to access. Fig. 17 shows an interface by which a user may change his or her password and update the new password in the system. (Note that "Portera" is a name used in trade by Portera

20   Systems of Campbell, CA). Fig. 18 is an illustration showing a command center application menu of the flight command center module. Via this menu, a user may access customer and flight information, locate airports and planes, create reports and access financing and accounting information. Fig. 19 illustrates navigation bars which may be used throughout the command center application.

25   Figs. 20-21 are illustrations showing view and help pull down menus associated with the interface of Fig. 18 and particular to the command center application. (Again, note that "Portera" is a name used in trade by Portera Systems of Campbell, CA).

Fig. 22 is an illustration showing a customer information pull down menu

associated with the interface of Fig. 18 by which a user may access customer information, travel card information and conduct a customer search. By clicking on "customer" a user is given access to a customer information interface, as shown in Fig. 23. Through the interface of Fig. 23, a user may add and edit information

5   related to one or more customers. By clicking on "customer search" in Fig. 22, a user is given access to a customer search interface, shown in Fig. 24. The interface of Fig. 24 enables a user to search for a customer by name, business name, telephone number, customer type, or prospect rating. Double clicking on any name displayed in accordance with the search result will link the user to the

10   individual customer's information profile as shown in Fig. 23. Through the interface of Fig. 25, a user may add or edit a customer action as well as record notes related to the action. The user may also print a letter to be sent to contractor personnel, aircraft service providers, or the customers. Similarly, a user may print label for the action. Fig. 26 shows an interface by which actions for all

15   customers may be viewed. By double clicking on any row, a user may view the details of the customer action.

Fig. 27 is an illustration of an interface by which a user may input to the database a customer preferences (including a customer's preferred jet, airport, flying times, mode of ground transportation or and catering needs or desires.)

20   Fig. 28 shows a customer references interface whereby a user may assign a current customer as a reference for new customers to provide the new customer or customers with insights into the contractor's service.

Fig. 29 is an illustration showing a complimentary upgrade report by which a user may upgrade customer's aircraft. A customer's aircraft may be

25   upgraded from a light jet to a medium or heavy jet. From a turbo propeller plane to a jet, etc. Double clicking on a customer name will electronically link a user to a customer information interface by which the user may view and edit customer information through another interface (such as the interface shown in Fig. 23. Double clicking on a flight ID will electronically link the user to a flight

information interface by which the user may view and edit flight information through another interface, such as that shown in Fig. 45.

Fig. 30 is an illustration showing an pull down menu associated with the interface of Fig. 18 by which a user may print, view or refresh information

5   related to travel cards. Fig. 31 shows a travel card information interface by which a user may add and edit a customer's travel card details and travel card account history. By this interface a user may add and delete new customers for a particular travel card and create a new travel card for a customer. Fig. 32 is an illustration showing a travel card/customer balance information interface, and

10   Fig. 33 shows a travel card referral interface by which a user may add new travel card referrals, record comments from customers regarding a referral, and record contractor personnel notes regarding the referrals.

Figs. 34-36 are illustrations showing interfaces by which a user may input to the database information related to an aircraft, including a picture of the

15   aircraft and customer or contractor personnel feedback concerning the aircraft. Fig. 37 is an illustration showing an aircraft search interface by which a user may access a search and notification module associated with the flight command module and find an aircraft by city, state, country, phone number, or aircraft service provider name. The interface also provides electronic links to an aircraft

20   information page that includes detailed information about that aircraft. The aircraft information page is created using the interface shown in Fig. 34. Fig. 38 shows an interface by which a user may view aircraft search results. Again, by clicking on any row, the user will gain access to more detailed information regarding the aircraft and flight.

25   Fig. 39 is an illustration showing an airport information interface by which a user may input to the database information related to an airport. A user may also view the information related to an airport, including all the known travel services associated with an airport. Fig. 40 is an illustration showing an airport locator interface by which a user may view airport information input to the

database in accordance with a map display.

Fig. 41 is an illustration of an interface by which a user may input and edit information related to an aircraft service provider, including the aircraft service provider's name or company name, address and phone number, as well as types

5   of planes the aircraft service provider can provide. A user may also record notes about an aircraft service provider through the interface of Fig. 41, and view the aircraft service provider's ARGUS rating, certification status and certification number. A user may also view information regarding pilots employed or contracted by the aircraft service provider. Fig. 42 shows an aircraft service

10   provider search interface by which a user may search for a carrier by name, city, state, country, or phone number. Search results are also displayed to the user via the interface of Fig. 42, and as was the case with respect to the customer and aircraft search interfaces, double clicking on any row of the search result display will give the user access to the aircraft service provider information interface of

15   Fig. 41 for more detailed information.

Fig. 43 is an illustration showing an address/city selection interface by which a user may find a city, country, or state by name or zip code associated with a customer, carrier, airport or aircraft.

Fig. 44 is an illustration of a flight information pull down menu associated

20   with the interface of Fig. 18. Via this pull down menu, a user may gain access to a flight calender, as shown in Figs. 47-50, a flight worksheet for recording and editing flight information, as shown in Fig. 45, a flight calculator, or a flight report as shown in Fig. 46. Via the flight report interface of Fig. 46, a user may view all flight requests received, quoted, in progress, completed, and canceled including

25   the flight ID, request date, flight start date, and name of the contractor employee that recorded the request. Double clicking on any field will electronically link the user to an interface whereby the user may view and modify the details of the flight (such as the through the flight worksheet interface shown in Fig. 45.)

Figs. 47-50 are illustrations showing month, day, grid and week views of a

flight calendar interface respectively. By double clicking on any entry in the flight calender, a user will gain access to an interface containing more detailed information about that flight or flight leg. Fig. 51 is an illustration showing a flight calendar filter interface by which a user may filtering the flight legs shown

5   in the month, day, grid and week views. Fig. 52 illustrates an option menu by which a user may print views of the calendar, hide flight legs so that they will not be seen in a calendar view, refresh the calendar to show recently added or modified flights, and add non-flight events to the calendar.

Although the embodiments hereinbefore described are preferred, many

10 modifications and refinements which do not depart from the true spirit and scope of the invention may be conceived by those skilled in the art. It is intended that all such modifications, including but not limited to those set forth above, be covered by the following claims.

15 02448/00104 192945.1